Question Paper Code	13319

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2024

Seventh Semester

Information Technology

20ITEL713 - USER INTERFACE / USER EXPERIENCE DESIGNING SKILLS

Regulations - 2020

Duration: 3 Hours   Max. Marks: 100

PART - A (MCQ) (20 × 1 = 20 Marks)
Answer ALL Questions

				Marks	K–Level	CO

1. What does WIMP stand for in GUI interaction styles? — 1, K1, CO1
   (a) Windows, Icons, Menus, Pointer   (b) Widgets, Images, Menus, Programs
   (c) Wide Interaction Model Program   (d) Windows, Input, Menus, Panels

2. Differentiate between usability and user experience in UI design. — 1, K2, CO1
   (a) System performance   (b) The user's understanding of how the system works
   (c) Implementation framework   (d) System memory

3. A usability heuristic that encourages reducing user memory load is called: — 1, K1, CO1
   (a) Aesthetic and minimalist design   (b) Consistency and standards
   (c) Recognition rather than recall   (d) Help and documentation

4. Which of the following is an example of human interaction speed? — 1, K1, CO2
   (a) System response time   (b) User task completion time
   (c) Data transfer rate   (d) File compression speed

5. How does ordering screen data and content benefit the user experience? — 1, K1, CO2
   (a) It increases visual complexity   (b) It helps users understand and complete tasks faster
   (c) It reduces memory usage   (d) It decreases screen size

6. What is one of the goals when presenting information simply and meaningfully? — 1, K1, CO2
   (a) To overwhelm the user with all available data (b) To make the content less accessible
   (c) To ensure clarity and understanding   (d) To make the system more complex

7. When gathering stakeholder requirements for an HCI system, which method is most effective? — 1, K1, CO3
   (a) Conducting interviews, focus groups, and surveys
   (b) Creating prototypes without user input
   (c) Designing the system based only on developer assumptions
   (d) Skipping the requirements stage entirely

8. Which protocol is primarily used to access web pages on the WWW? — 1, K1, CO3
   (a) HTTP/HTTPS   (b) FTP   (c) SMTP   (d) SNMP

9. What is a major challenge in designing collaborative systems? — 1, K1, CO3
   (a) Ensuring real-time synchronization and conflict resolution
   (b) Ensuring that users work in isolation
   (c) Designing only for one user at a time
   (d) Preventing any communication among users

10. Which of the following is NOT a mobile platform? — 1, K1, CO4
    (a) iOS   (b) Windows Phone   (c) HTML5   (d) BlackBerry OS

11. What is "Mobile 2.0"? — 1, K1, CO4
    (a) The second version of the Android OS
    (b) The next generation of mobile web services with richer interactivity
    (c) A framework for native apps
    (d) A security update for mobile devices

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **13319**

12. What is the primary difference between iOS and Android platforms?	*1*	*K1*	*CO4*

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    (a) iOS is open-source, and Android is closed-source.
    (b) Android is open-source, and iOS is closed-source.
    (c) Both are open-source.
    (d) Both are closed-source.

13. What is the primary difference between modal and non-modal overlays?
    (a) Non-modal overlays are always smaller than modal ones.
    (b) Non-modal overlays can't display information.
    (c) Modal overlays only work on mobile devices.
    (d) Modal overlays block interaction with the rest of the interface.

14. What should be avoided while designing drag-and-drop interfaces?
    (a) Using visual cues for draggable elements
    (b) Providing feedback during interactions
    (c) Limiting draggable elements to a single item
    (d) Allowing users to undo actions

15. Which of the following is an example of virtual scrolling?
    (a) Loading entire content at once
    (b) Loading content dynamically as the user scrolls
    (c) Dividing content into multiple pages
    (d) Using a fixed-length scrollbar

16. Virtual pages are commonly used in:
    (a) Drag-and-drop tools   (b) Single-page applications
    (c) Input overlays   (d) Fixed layout designs

17. What does "screen navigation flow" refer to?
    (a) The aesthetic design of the screen   (b) The logical sequence of user screens
    (c) Placement of buttons and icons   (d) The performance of the UI

18. What is the purpose of cognitive models in HCI?
    (a) To simulate hardware behaviour   (b) To study how users process information
    (c) To define graphical elements   (d) To determine software architecture

19. A mobile game targets casual players and requires a simple and engaging interface. Which design element would improve user engagement the most?
    (a) Detailed settings menus   (b) Intuitive touch gestures and feedback
    (c) Complex navigation paths   (d) Long tutorials

20. A news app features an endless feed of articles using virtual scrolling. What is the primary advantage of virtual scrolling?
    (a) Reduced server load   (b) Faster content loading and navigation
    (c) Improved static content visibility (d) Simplified code structure

Marks/K-level/CO for items 13–20: 13 (1, K1, CO5); 14 (1, K1, CO5); 15 (1, K1, CO5); 16 (1, K1, CO5); 17 (1, K1, CO6); 18 (1, K1, CO6); 19 (1, K2, CO6); 20 (1, K1, CO6)

PART - B (10 × 2 = 20 Marks)
Answer ALL Questions

No.	Question	Marks	K	CO
21.	What are the main components of the Model-View-Controller (MVC) framework?	2	K1	CO1
22.	Compare effectiveness and efficiency in usability.	2	K2	CO1
23.	Why is the ordering of screen data important in interface design?	2	K1	CO2
24.	What factors must be considered when designing for information retrieval on the web?	2	K1	CO2
25.	Define CUSTOM methodology.	2	K1	CO3
26.	Classify the four types of textual communication.	2	K2	CO3
27.	What are the two distinct types of navigation layouts for mobile devices?	2	K1	CO4
28.	Do you think that prototyping will solve all problems associated with user interface design? Justify your answer.	2	K2	CO4
29.	Define Mystery Meat and Soft Mode.	2	K1	CO5
30.	How do touch-based input methods enhance interactivity for mobile users?	2	K1	CO6

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

PART - C (6 × 10 = 60 Marks)
Answer ALL Questions

31. a) Explain the role of Ergonomic principles in designing a GUI.   *10*   *K2*   *CO1*

OR

b) Explain the concept of "direct manipulation" in user interfaces and give examples of systems that use this interaction style.   *10*   *K2*   *CO1*

32. a) How does screen planning and organizing elements enhance usability? Provide an example of a well-organized screen layout.   *10*   *K2*   *CO2*

OR

b) Explain the design process in creating an interactive system and discuss the steps involved in ensuring effective user interaction.   *10*   *K2*   *CO2*

33. a) Explain how GOMS and the keystroke – level model support the interaction design process.   *10*   *K2*   *CO3*

OR

b) Describe the problem space model and interacting cognitive subsystems in detail.   *10*   *K2*   *CO3*

34. a) What is Mobile Information Architecture (MIA)? Discuss the principles of effective MIA and explain how MIA affects the user experience (UX) of a mobile application.   *10*   *K2*   *CO4*

OR

b) Discuss the process of mobile game development. Highlight the role of game engines, programming languages, and monetization strategies in game development.   *10*   *K2*   *CO4*

35. a) What is the purpose of drag and drop? Briefly explain the drag and drop module.   *10*   *K2*   *CO5*

OR

b) How virtual pages and contextual tools are used in the design of rich web UI? Illustrate and compare with suitable examples.   *10*   *K2*   *CO5*

36. a) A company is designing a File Management system for users to organize their documents. They want to include a drag-and-drop feature for moving files between folders. Identify the key challenges in implementing the drag-and-drop feature. Suggest a step-by-step design approach to ensure seamless usability, including visual feedback, error handling, and target indicators.   *10*   *K3*   *CO6*

OR

b) A start-up company is launching a fitness tracking app designed for athletes and fitness enthusiasts. The app includes features like activity tracking, personalized fitness plans, and integration with wearable devices. Discuss the critical elements of mobile design for this app. How would you ensure the app provides a seamless experience across various mobile platforms and devices while considering the needs of both beginner and advanced users?   *10*   *K3*   *CO6*